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L11: Entry 1 of 1

File: USPT

Jul 23, 2002

US-PAT-NO: 6423800

DOCUMENT-IDENTIFIER: US 6423800 B1

TITLE: Pelletized polyolefin having ultra-high melt flow and its articles of manufacture

DATE-ISSUED: July 23, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Musgrave; Michael W.	Houston	TX		

US-CL-CURRENT: 526/227; 525/240, 525/242, 525/387, 526/348

## ABSTRACT:

Provided is pelletized polymer composition, a majority of which is poly-.alpha.-olefin or poly-.alpha.-olefin copolymer, which when melted displays melt flow rate greater than about 500 dg/min.

22 Claims, 0 Drawing figures

Exemplary Claim Number: 1

Full	Title	Citation	Print	Review	Classification	Date	Reference	Sequences	Attachments
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Name	Draw Desc	Image
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Term	Documents
(4 AND 9).USPT,PGPB,DWPI.	1
(L4 AND L9).USPT,PGPB,DWPI.	1

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**Search Results - Record(s) 1 through 1 of 1 returned.**☐ 1. Document ID: US 5168006 A

L5: Entry 1 of 1

File: USPT

Dec 1, 1992

US-PAT-NO: 5168006

DOCUMENT-IDENTIFIER: US 5168006 A

TITLE: Woven fabric for fiber-reinforced thermoplastic resin laminate

DATE-ISSUED: December 1, 1992

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Inoguchi; Hirokazu	Fukushima			JP
Watanabe; Shoichi	Fukushima			JP
Kasai; Shin	Fukushima			JP
Kato; Keiichi	Fukushima			JP
Fujii; Mikiya	Fukushima			JP

US-CL-CURRENT: 442/187; 428/902, 442/189

## ABSTRACT:

Disclosed is a woven fabric used for production of fiber-reinforced thermoplastic resin laminates wherein each or warps and wefts which constitute the fabric comprises at least one kind of thermoplastic resin yarns and at least one kind of reinforcing yarns and the reinforcing yarns of the warps and wefts as such constitute a weave. The weave constituted of only the reinforcing yarns is preferably a plain weave. The fiber-reinforced thermoplastic resin laminates made by compression molding a laminate of said woven fabrics are high in strength.

9 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 1

F08 Title Citation Print Renew Classification Date Reference Sequences Attachments

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**Search Results - Record(s) 1 through 1 of 1 returned.**☒ **1. Document ID: US 6106650 A**

L2: Entry 1 of 1

File: USPT

Aug 22, 2000

US-PAT-NO: 6106650

DOCUMENT-IDENTIFIER: US 6106650 A

TITLE: Manufacturing of fibre reinforced composites

DATE-ISSUED: August 22, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cheshire; Edward John	New Alresford			GB

US-CL-CURRENT: 156/229; 156/140, 156/160, 156/161, 156/163, 156/196, 156/245,  
156/500, 156/62.2, 156/62.6, 156/62.8

## ABSTRACT:

A method for manufacturing an article of fibre reinforced resin material includes the preparation of a reinforcement preform which includes one or more roves of staple fibres with sufficiently low twist to enable the fibres to slide relative to each other and thereby the rove to elongate when subjected to tension. The reinforcement preform is shaped by deforming the preform into the desired three dimensional shape of the article being manufactured. The shaping can be carried out before, after or simultaneously with impregnation with matrix material. The matrix material may be thermoplastic material incorporated in or with the preform.

14 Claims, 0 Drawing figures  
Exemplary Claim Number: 1

Full Title

CLS.1

SEQ.1 ATT.1

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Term	Documents
"6106650"	1
6106650S	0
"6106650"[PN].USPT.	1
(6106650[PN]).USPT.	1

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L3: Entry 3 of 5

File: DWPI

Dec 28, 1994

DERWENT-ACC-NO: 1995-031459

DERWENT-WEEK: 199505

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TITLE: Forming a composite from a multicomponent staple fibre yarn - having a thermoplastic matrix component having a m.pt. or softening point at least five deg. below that of a drawable fibrous thermoplastic reinforcement

INVENTOR: HOYT, M B; ILG, O M ; KENT, G M

PRIORITY-DATA: 1993US-0067444 (May 25, 1993)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 630735 A2	December 28, 1994	E	009	B29C047/04
CA 2122548 A	November 26, 1994		000	B29C067/14
EP 630735 A3	March 15, 1995		000	B29C047/04
JP 07097750 A	April 11, 1995		009	D04B001/16

INT-CL (IPC): B29C 47/04; B29C 47/30; B29C 65/02; B29C 67/14; B29C 70/10; B29K 67/00; B29K 77/00; B29K 105/08; B29L 9/00 ; D01F 8/14; D04B 1/16; D04H 3/16

ABSTRACTED-PUB-NO: EP 630735A

## BASIC-ABSTRACT:

A fibre reinforced composite is made by processing a fabric comprising a multicomponent staple fibre yarn having (i) a thermoplastic matrix component of a first m.pt. (if crystalline) or a first softening pt. (if not crystalline) and (ii) a drawable fibrous thermoplastic reinforcing component of a second m.pt. (if crystalline) or a second softening pt. (if not crystalline), the first m.pt. or softening pt. being at least 5 deg. C below the second. Also claimed is a process of forming fibre reinforced laminates comprising (a) providing a multicomponent staple fibre yarn as above, wherein the matrix and reinforcing components are both fibrous, (b) fabricating the yarn into a pre-consolidation fabric, (c) shaping the fabric by conforming it to the shape of a mould or substrate, and (d) heating the shaped fabric to the first m.pt. or softening pt. but not to the second so that the matrix component melts and consolidates the reinforcing component.

USE - Esp. where the use of high grade fibre reinforced plastic is advantageous. Examples given include automotive products, recreational equipment, domestic articles e.g. boxes for microwaves, housings for electronic appts., satellite dishes, aircraft components, shipbuilding, furniture, vessels and helmets.

ADVANTAGE - The fabrics can be draped when cold thereby facilitating filling of a mould of complex geometry prior to thermoforming. The composites formed are substantially free from voids.

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L1: Entry 1 of 4

File: DWPI

Apr 15, 1998

DERWENT-ACC-NO: 1998-209006

DERWENT-WEEK: 200042

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TITLE: Production of reinforced composite from preform shaped before, during or simultaneously with resin impregnation - is carried out using reinforcement comprising rove of staple fibres with little twist, allowing rove elongation under tension in predictable manner with appropriate fibre distribution

INVENTOR: CHESHIRE, E J

PRIORITY-DATA: 1996GB-0020408 (October 1, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 835741 A2	April 15, 1998	E	005	B29C070/20
US 6106650 A	August 22, 2000		000	C08L023/12

INT-CL (IPC): B29 B 11/16; B29 C 70/20; C08 L 23/12

ABSTRACTED-PUB-NO: EP 835741A

BASIC-ABSTRACT:

A new method producing reinforced composite starts with reinforcement preform preparation. This includes a rove of staple fibres of sufficiently low twist that they can slide relatively, permitting rove elongation under tension. In the new method the rove is substantially unstretched and uniform along its length in the preform. The preform is shaped by deformation before, during and/or simultaneously with matrix material impregnation, causing permanent elongation of the rove. Also claimed is the preform, essentially as described.

USE - To manufacture fibre-reinforced, shaped articles.

ADVANTAGE - Predictable and controlled stretching of the rove is achieved, and with it the desired characteristics in the finished article. Deformation to the required shape is accompanied by appropriate distribution of the e.g. flat fibres in the moulding. Single or multi-directional lays are feasible. The process and its variations are discussed further, with implementation suggestions, including e.g. laser-trimming.

ABSTRACTED-PUB-NO:

US 6106650A EQUIVALENT-ABSTRACTS:

A new method producing reinforced composite starts with reinforcement preform preparation. This includes a rove of staple fibres of sufficiently low twist that they can slide relatively, permitting rove elongation under tension. In the new method the rove is substantially unstretched and uniform along its length in the preform. The preform is shaped by deformation before, during and/or simultaneously with matrix material impregnation, causing permanent elongation of the rove. Also claimed is the preform, essentially as described.

USE - To manufacture fibre-reinforced, shaped articles.

ADVANTAGE - Predictable and controlled stretching of the rove is achieved, and with it the desired characteristics in the finished article. Deformation to the required

shape is accompanied by appropriate distribution of the e.g. flat fibres in the moulding. Single or multi-directional lays are feasible. The process and its variations are discussed further, with implementation suggestions, including e.g. laser-trimming.

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L4: Entry 5 of 5

File: DWPI

Feb 15, 1989

DERWENT-ACC-NO: 1989-047842

DERWENT-WEEK: 198907

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TITLE: Resin-laminates woven reinforcing fabric - has warps and wefts each comprising thermoplastic yarn and reinforcing yarn

INVENTOR: FUJII, M; INOBUCHI, H ; KASAI, S ; KATO, K ; WATANABE, S

PRIORITY-DATA: 1987JP-0200905 (August 13, 1987)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 302989 A	February 15, 1989	E	010	
DE 3885814 G	January 5, 1994		000	D03D015/00
EP 302989 B1	November 24, 1993	E	012	D03D015/00
JP 01045841 A	February 20, 1989		000	
US 5168006 A	December 1, 1992		010	B32B007/00

INT-CL (IPC): B29B 15/10; B29B 15/12; B29C 67/14; B32B 7/00; D03D 1/00; D03D 15/00

ABSTRACTED-PUB-NO: EP 302989A

## BASIC-ABSTRACT:

Woven fabric for reinforcing resin laminates, has warps (A) and wefts (B), each of which comprises at least one kind of thermoplastic yarn (2A, 2B) and at least one kind of reinforcing yarn (1A, 1B) with the reinforcing yarns (1A, 1B) constituting a weave in themselves, specifically basket or twill weave. Pref. the reinforcing yarn (1A, 1B) comprises glass-fibres sized with epoxy resin, opt. amine-modified or ethylene-oxide modified, urethane resin and urethane-modified polyester resin, or a silane coupling agent and a cationic surfactant. Pref. the size contains a lubricant.

The glass yarn pref. comprises 3-23 microns monofilaments numbering 100-800, of twist level 0.5-2 turns per 25mm.

ADVANTAGE - The fabric remains stable during hot-press laminates moulding which melts the thermoplastic yarns.

## ABSTRACTED-PUB-NO:

EP 302989B EQUIVALENT-ABSTRACTS:

A woven fabric usable for the production of fibre-reinforced thermoplastic resin laminates wherein each of warps and wefts which constitute the fabric comprises at least one kind of thermoplastic resin yarns and at least one kind of reinforcing yarns characterised in that the reinforcing yarns of the warps and wefts as such constitute a weave, wherein if the thermoplastic resin yarns are removed from the warps and wefts which constitute the fabric, the weave construction is retained by only the remaining reinforcing yarns.

US 5168006A

Apolipoprotein B or calculated LDL cholesterol is screened as an indicator of coronary risk in an individual; where LDL is low density lipoprotein, and VLDL is

very low density lipoprotein.

Process comprises (a) collecting blood from an individual; (b) sepg. red cells obt'd.; (c) drawing a sample of the serum into a calibrated capillary tube contg. a VLDL/LDL pptg. agent; (d) contacting serum with pptg. agent in the tube; (e) agitating it; (f) allowing VLDL/LDL ppte. to form; (g) centrifuging the tube; (h) measuring vol. of ppte.; and (i) measuring the ppte. vol. and correlating it with known blood levels of apolipoprotein B and calculated LDL cholesterol.

ADVANTAGE - Is rapid, inexpensive, accurate, and reliable.